REMARKS

Initially, in the Office Action dated May 5, 2004, the Examiner objects to claim 1 because of informalities. Claims 6 has been rejected under 35 U.S.C. §112, second paragraph, as lacking antecedent basis. Claims 13-16, 31, 42 and 43 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Claims 1, 6, 7, 9-16, 28-30, 34-36 and 39 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,684,800 (Dobbins et al.). Claims 17-22, 31-33, 37, 38 and 40-43 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Dobbins et al. in view of U.S. Patent No. 6,581,166 (Hirst et al.). Claims 2-5, 8 and 23-27 have been objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form.

By the present response, Applicants have amended claims 1, 2, 4, 6, 8, 12, 13, 23, 28, 30, 31, 34, 39 and 42 to further clarify the invention. Claims 1-43 remain pending in the present application.

Allowable Subject Matter

Applicants thank the Examiner for indicating that claims 2-5, 8, 23-27 contain allowable subject matter if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants have rewritten claims 2, 8 and 23 in independent form making these claims allowable.

Claim Objections

Claim 1 has been objected to because of informalities. Applicants have amended this claim to further clarify the invention and respectfully request that this objection be withdrawn.

35 U.S.C. §112 Rejections

Claims 6, 13-16, 31, 42 and 43 have been rejected under 35 U.S.C. §112, second paragraph. Applicants have amended these claims to further clarify the invention and respectfully request that these rejections be withdrawn.

35 U.S.C. §102 Rejections

Claims 1, 6, 7, 9-16, 28-30, 34-36 and 39 have been rejected under 35 U.S.C. §102(b) as being anticipated by Dobbins et al. Applicants respectfully traverse these rejections.

Dobbins et al. discloses establishing restricted broadcast groups in a switched network where different virtual LAN identifiers (VLAN-IDs) are assigned to different subsets of associated end systems or access ports. Tables are maintained for mapping the VLAN-IDs with associated end systems and access points. When a broadcast packet is received at a first switch, it is encapsulated with a VLAN header including the VLAN-IDs, and sent out a multicast channel to all other switches in the network (domain). The original packet is sent out the other access ports of the receiving switch for the designated VLAN-IDs. The switches receiving the VLAN packet remove the header and send the original packet out access ports associated with the VLAN-IDs extracted from the header.

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Regarding claims 1, 12, 13, 28-30, 34-36 and 39, Applicants submit that
Dobbins et al. does not disclose or suggest the limitations in the combination of each
of these claims of, <u>inter alia</u>, a network relay apparatus for connecting networks to
each other that includes relay means for relaying a multicast packet between
logically constructed networks, or an information relay apparatus for relaying a
multicast packet among a plurality of logical networks of information that transmits
the multicast packet to transmission destinations including locally different networks
of information, or valid port information capable of discriminating as to whether or not
another relay apparatus owns a learning function by which information related to a
multicast packet is registered into a predetermined table similar to a relay apparatus,
or a learning processing unit for relaying multicast packet to transmission
destinations registered in a learning table by comparing both a destination address
and a transmission source address of a multicast packet received from one network
among the networks with the learned transmission destination information which is
registered in the learning table. Dobbins et al. discloses a relay of a
multicast/broadcast packet <u>within a same virtual local area network (VLAN)</u>. In
contrast, the limitations in the claims of the present application relate to a relay of a
multicast packet <u>between different VLANs</u>. Dobbins et al. discloses that the switch
11 receives a multicast packet from the end system 20B (see Fig. 5 and col. 6,
lines 13-45). In Dobbins et al. Fig. 5, three VLAN IDs, i.e. "VLAN 100", "VLAN 20"
and "VLAN 5", are shown. Dobbins et al. discloses a table (Fig. 6) showing
correspondence relationships between end systems and PLAN IDs. The end system

20B is associated with VLAN 100 and VLAN 20. When receiving a multicast packet from the end system 20B, Dobbins et al. switch 11 determines port 1 associated with VLAN 100, <u>which is the same VLAN associated with the end system 20B</u>, based on a port map table (see Fig. 7) and the switch 11 sends out the multicast packets to the end system 20A. Similarly, when receiving the VLAN packet from the switch 11, the switches 12, 13 and 14, send out the multicast packet to the end systems 20D, 20F, 20H, 20I, 20J and 20K associated with VLAN 100 or VLAN 20, <u>which is the same VLAN associated with the end system 20B</u>. Therefore, Dobbins et al. discloses a system where <u>the multicast packet sent from the end system 20B is transmitted to the end systems associated with a VLAN with which the end system 20B is associated</u>. This is not a network relay apparatus for <u>connecting networks to each other</u> that includes relaying a multicast packet <u>between logically constructed networks</u>, as recited in the claims of the present application.

Moreover, Dobbins et al. does not disclose or suggest a learning function by which information related to a multicast packet is registered into a predetermined table similar to the relay apparatus, as recited in the claims of the present application. Dobbins et al. discloses a discovery agent carrying out <u>detection of "end systems" and learning thereof</u>. In contrast, the limitations in the claims of the present application relate to <u>learning that concerns "transmission destinations" at the time of a multicast packet is relayed</u>. Dobbins et al. discloses a learning being utilized to assure arrival of a multicast packet and thus, <u>all multicast packets are transmitted to all switches</u>. This is completely different from the limitations in the claims of the

present application that relate to <u>a multicast packet not being transmitted to unnecessary switches</u>.

Regarding claims 6, 7, 9-11, 14-16, Applicants submit that these claims are dependent on one of independent claims 1 and 13 and, therefore, are patentable at least for the same reasons noted regarding these independent claims. For example, Applicants submit that Dobbins et al. does not disclose or suggest where the transmission information includes rewrite information which is provided with a multicast packet and is rewritten when the multicast packet is relayed.

Accordingly, Applicants submit that Dobbins et al. does not disclose or suggest the limitations in the combination of each of claims 1, 6, 7, 9-16, 28-30, 34-36 and 39 of the present application. Applicants respectfully request that these rejections be withdrawn and that these claims be allowed.

<u>35 U.S.C. §103 Rejections</u>

Claims 17-22, 31-33, 37-38 and 40-43 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Dobbins et al. in view of Hirst et al. Applicants respectfully traverse these rejections.

Hirst et al. discloses fault detection and recovery that utilizes dual independent networks to provide fault tolerance. These networks, a primary and alternate network, are utilized such that communications for a particular computer take place via that computer's preferred network by default. Faults are detected through the use a heartbeat pinging mechanism to detect faults on the network itself and by periodic port integrity checks to detect port faults. The integrity of the non-

default network and port are also periodically verified to assure effective fault recovery.

Regarding claims 17-19, 31, 32, 37, 38 and 40-43, Applicants submit that none of the cited references, taken alone or in any proper combination, disclose, suggest or render obvious the limitations in the combination of each of these claims of, inter alia, multicast relay means operated in such a manner that when data is relayed from networks which are physically identical to each other, the data having a same content are relayed only one time to a same destination with respect to a relay destination, or multicast relay means for receiving only one time, one of multicast packets having a same content and directed to a same destination from information networks which are physically identical to each other, or in a case that a plurality of logically networks are present in an apparatus group corresponding to the destination of a received multicast packets, a pre-selected set of the multicast packets being transmitted to the apparatus group. The Examiner admits that Dobbins et al. does not disclose or suggest data having the same content being relayed only one time to a same destination with respect to a relay destination, but asserts that Hirst et al. discloses these limitations in the claims of the present application at col. 9, lines 25-50. However, Hirst et al. discloses that after packets have been received redundantly, the redundancy of the packets are checked to discard redundant ones in order that only one packet is processed. In contrast, the limitations in the claims of the present application, relate to a packet <u>being transmitted only one time</u> in order to suppress loads on networks. Hirst et al.

discloses a system that <u>checks redundancy of packets on the receiving side</u>. In contrast, the limitations in the claims of the present application relate to a system that <u>checks redundancy of packet transmission prior to transmission thereof on the transmitting side</u>. According to the present invention, <u>redundant packets are not transmitted</u>, therefore, suppressing loads on the network. In contrast, Hirst et al. discloses <u>transmission of redundant packets</u> and the redundant packets being handled at a receiving side.

Regarding claims 20-22 and 33, Applicants submit that these claims are dependent on one of independent claims 17 and 32 and, therefore, are patentable at least for the same reasons noted regarding these independent claims. For example, Applicants submit that none of the cited references disclose or suggest networks which are physically identical to each other, but are logically different from each other, including a logical network which is exclusively provided in order to execute a multicast relay process operation, or in a case that a multicast packet is received from more than one network which are physically identical to each other, but are logically different from each other, one network being selected from more than one network which are physically identical to each other, but are logically different from each other being registered as a representative network in the multicast relay designation registering table.

Accordingly, Applicants submit that none of the cited references, taken alone or in any proper combination, disclose, suggest or render obvious the limitations in the combination of each of claims 17-22, 31, 33, 37, 38, 40-43 of the present

application. Applicants respectfully request that these rejections be withdrawn and that these claims be allowed.

In view of the foregoing amendments and remarks, Applicants submit that claims 1-43 are now in condition for allowance. Accordingly, early allowance of such claims is respectfully requested.

To the extent necessary, Applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (referencing attorney docket no. 500.39049X00).

Respectfully submitted,

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